

## REMARKS

In the Office Action, the Examiner:

- (1) objected to the drawings;
- (2) rejected claim 33 under 35 U.S.C. § 112, first paragraph;
- (3) rejected claims 16 and 33 under 35 U.S.C. § 112, second paragraph;
- (4) rejected claims 1, 10, 11, 13, 15, 16, 33, 35, 37, 42, and 44-46 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0108747, inventors Dietz et al. (hereinafter "Dietz") in view of U.S. Patent No. 4,862,911, issued to Yie (hereinafter "Yie");
- (5) rejected claims 12 and 43 under 35 U.S.C. § 103(a) as being unpatentable over Dietz in view of Yie and in further view of U.S. Patent No. 4,222,725, issued to Rodgers (hereinafter "Rodgers");
- (6) rejected claims 2-5 and 47 under 35 U.S.C. § 103(a) as being unpatentable over Dietz in view of Yie and in further view of U.S. Patent No. 1,852,560, issued to Giese (hereinafter "Giese");
- (7) rejected claims 6 and 39 under 35 U.S.C. 103(a) as being unpatentable over Dietz in view of Yie and Giese and in further view of U.S. Patent No. 4,398,110, issued to Flinchbaugh et al. (hereinafter "Flinchbaugh");
- (8) rejected claims 8 and 9 under 35 U.S.C. 103(a) as being unpatentable over Dietz in view of Yie, Giese, Flinchbaugh and in further view of U.S. Patent No. 3,261,591, issued to Campbell et al. (hereinafter "Campbell"); and
- (9) rejected claims 36 and 38 under 35 U.S.C. 103(a) as being unpatentable over Dietz in view of Yie and Giese and in further in view of U.S. Patent No. 6,208,923, issued to Hommel (hereinafter "Hommel").

Applicant respectfully requests the Examiner to reconsider the aforementioned rejections in view of the attached amendments and the following remarks.

### **I. Status of the Claims**

Claims 1-6, 8-13, 15, 16, 33, 35-39, and 42-47 are pending.

Claims 1, 16, 33, 43, 44, and 47 are currently amended.

Claim 15 is hereby canceled.

## **II. Interview Summary**

Applicant wishes to thank Examiner Stimpert and Supervisory Examiner Kramer for the opportunity to discuss the pending application on February 3, 2010. Pursuant to M.P.E.P. § 713.04, Applicant offers the following interview summary.

The interview focused on a number of points. First, the parties discussed the fact that the controlled valve disclosed by the pending application is remote from the disclosed pump device. Second, the parties discussed the location of the discharge pipe relative to the reciprocating pump and sensing a pressure of hydraulic fluid within the discharge pipe and delivered to the controlled valve, as disclosed by the pending application and in contrast to that disclosed by the cited prior art. It was agreed that sensing a pressure of hydraulic fluid within the discharge pipe distinguishes the disclosure of the pending application from that of the cited prior art. Third, the parties discussed the branch pipe that extends from the discharge pipe and enables pressurized hydraulic fluid to be diverted from the controlled valve and control of the hydraulic fluid pressure in the discharge pipe. It was also agreed that using the branch pipe to control the hydraulic fluid pressure in the discharge pipe is not disclosed by the cited prior art. Lastly, it was suggested that Applicant review the Dietz disclosure, in particular those components proximate pump 102, to determine if the disclosure of the pending application could be further distinguished.

## **III. Claim Rejected Under 35 U.S.C. § 112, first paragraph**

The Examiner rejects claim 33 for failing to comply with the written description requirement. In particular, the Examiner finds no support for the claimed “pressure relief valve communicating with the inlet port.” Claim 33 is currently amended to recite “a safety valve communicating with the first port.” This amendment is supported at least by Figure 1, which illustrates safety valve 42 in fluid communication with discharge hole 27 via discharge pipe 34 and second branch pipe 40 connected therebetween. Valve 42 is actuatable to enable deliver hydraulic fluid from discharge pipe 34 through second branch pipe 40 and feedback pipe 55 to intermediate reservoir 31, whereby fluid pressure in discharge pipe 34 and to the valve is relieved. Para. [0066] of the Specification. As such, one may consider safety valve 42 to be a pressure relief valve. In any event, claim 33 is amended to recite “a safety valve,” rather than “a pressure relief valve,” because that terminology is consistent with the Specification. Applicant believes the amendments to claim 33 overcomes the Examiner’s rejection of this claim under 35 U.S.C. § 112, first paragraph.

#### **IV. Objections to the Drawings**

The Examiner objects to the drawings, believing the pressure relief valve of claim 33 is not shown. As discussed above, claim 33 is currently amended to recite “a safety valve communicating with the first port.” Figure 1 of the pending application illustrates safety valve 42 in fluid communication with discharge hole 27. Applicant believes the amendment to claim 33 overcomes the Examiner’s objection to the drawings.

#### **V. Claim Rejected Under 35 U.S.C. § 112, second paragraph**

The Examiner rejects claims 16 and 33 as indefinite. In particular, the Examiner rejects claim 16 because “the discharge pipe” lacks antecedent basis and “the intermediate reservoir” is recited twice. The Examiner rejects claim 33 because “the inlet port” lacks antecedent basis.

Claim 16 depends from claim 1, which is currently amended to recite “a discharge pipe.” This amendment to claim 1 provides antecedent basis for “the discharge pipe” recited by claim 16. Claim 16 is, however, amended to recite “the intermediate reservoir,” rather than “an intermediate reservoir,” thereby eliminating the duplicate recitation noted by the Examiner.

As discussed above, claim 33 is currently amended to recite “the first port,” rather than “the inlet port.”

Applicant believes the amendments to claims 1, 16, and 33 overcome the Examiner’s rejection of claims 16 and 33 under 35 U.S.C. § 112, second paragraph.

#### **VI. Claims Rejected as Obvious over Dietz in view of Yie**

The Examiner rejects claims 1, 10, 11, 13, 15, 16, 33, 35, 37, 42, and 44-46 as obvious over Dietz in view of Yie. Claims 1 and 44 are independent claims. Claims 10, 11, 13, 15, 16, 33, 35, 37, and 42 depend from claim 1. Claims 45 and 46 depend from claim 44.

##### Claims 1, 10, 13, 15, 16, 33, 35, 37 and 42

Claim 1, as amended, requires a discharge pipe coupled between the first port and the valve and operable to deliver hydraulic fluid from the piston-cylinder unit to the valve for actuating the valve. Dietz does not disclose a discharge pipe coupled between a first, or discharge, port of pump 102 and bore closure assembly 60, regardless of whether pump 102 is the pump as disclosed by Dietz or a reciprocating pump as disclosed by Yie.

Yie does not obviate this deficiency. The Examiner finds fluid outlet passage 15 of Yie discloses the claimed discharge pipe. Applicant respectfully traverses. Fluid outlet passage 15 of Yie

is not a pipe. Rather, it is a bore formed in valve body 14. Even assuming *arguendo* passage 15 were a pipe, coupling a pipe between a discharge port in pump 102 and shaft 110 of Dietz, as suggested by the Examiner on page 6 of the Office Action, would make the Dietz SCSSV 45 inoperable. Hydraulic fluid within sealed chamber 77 must be permitted to flow between bellows 106, 108 to enable bellows 108 to stroke out to open bore closure assembly 60 and to contract to close bore closure assembly 60, and to enable pressure equalization between the pressure inside sealed chamber 77 and that within bore 54. Coupling a pipe between a discharge port in pump 102 (regardless of whether pump 102 is the pump as disclosed by Dietz or a reciprocating pump as disclosed by Yie) would not permit hydraulic fluid to be transferred between bellows 106, 108 as needed. Thus, modifying the Dietz SCSSV 45 to include a discharge pipe coupled between a discharge port in pump 102 and shaft 110 would render the Dietz SCSSV 45 unsatisfactory for its intended purpose. As such, there is no suggestion or motivation to make the proposed modification. M.P.E.P. § 2143.01.

Dietz describes that conventionally, flapper valves and ball valves are actuated by an increase or decrease in a fluid pressure within a control line extending from the SCSSV to the ocean surface. Dietz further describes problems associated with this mode of actuation. Col. 3, Lines 34-46. Following this passage, Dietz states, “Thus, in the present invention, a pressure balanced (also referred to as a pressure compensated) drive assembly is used to actuate the bore closure assembly *in place of* a hydraulic control signal from the surface (emphasis added).” Col. 3, Lines 46-50. Applicant respectfully asserts this passage of Dietz indicates bore closure assembly 60 is not hydraulically actuated, in contrast to that required by claim 1.

Claim 1 further requires a discharge pipe pressure sensor operable to sense a pressure of hydraulic fluid in the discharge pipe and outside the cylinder. As mentioned by the Examiner on page 8 of the Office Action, neither Dietz nor Yie discloses pressure monitoring. Thus, neither of these references discloses the claimed pressure sensor.

The Examiner notes that Rodgers discloses a pressure sensor 56. See page 8 of Office Action. Applicant respectfully asserts that pressure sensor 56 does not disclose the claimed pressure sensor. Pressure sensor 56 is operable to sense pressure inside of cylinder 19 of pump 18, not outside the cylinder and inside a discharge pipe coupled thereto, as required by claim 1. Col. 4, Lines 28-30. Thus, pressure sensor 56 of Rodgers does not disclose the claimed pressure sensor.

Claim 1 further requires a branch pipe coupled to the discharge pipe between the first port and the valve, the branch pipe operable to divert hydraulic fluid from the valve when a pressure of hydraulic fluid within the discharge pipe exceeds a predetermined value, whereby the pressure of

hydraulic fluid within the discharge pipe is controlled. Dietz does not disclose the claimed branch pipe. Furthermore, assuming *arguendo* that Dietz discloses delivering hydraulic fluid from pump 102 to bore closure assembly 60, Dietz does not disclose diverting hydraulic fluid from that path. Consequently, Dietz also does not disclose diverting hydraulic fluid from that path to control a pressure of hydraulic fluid along the path.

Dietz discloses bore closure assembly 60 is biased to the closed position such that flapper 61 prevents flow through bore 54. Col. 2, Lines 38-39. To open bore closure assembly 60, motor 76 is powered and clutch 91 is engaged to drive ball screw assembly 98, thereby forcing flow tube 65 downward against flapper 61. Engagement with flow tube 65 causes flapper 61 to pivot about hinge 69 until bore 54 is no longer blocked by flapper 61. Electric motor 76 drives bore assembly 60 to the open position as sensed and communicated to motor 76 by a means for sensing and communicating the position of the bore closure assembly 60 (for example, the location of flow tube 65, flapper 61, ball nut of ball of ball screw assembly 98, or ball valve). Col. 7, Lines 48-63. Thus, the open position of bore closure assembly 60 is determined based on sensing the positions of components of bore closure assembly 60, not hydraulic pressure. Also, the components sensed are disposed within bore closure assembly 60, not within a discharge pipe coupled thereto, as recited by claim 1.

Dietz discloses the means for sensing and communicating the position of the bore closure assembly 60 may alternatively be an electrical current monitor on drive assembly 75. The electrical current monitor senses a spike in current which indicates the position (open or closed) of bore closure assembly 60. Col. 7, Line 63 – Col. 8, Line 4. As with the embodiment described in the previous paragraph, this embodiment also does not disclose sensing a hydraulic pressure, but rather a spike in current. Furthermore, the spike in current is sensed by the motor on drive assembly 75, not within a discharge pipe.

For these reasons, Applicant respectfully asserts that Dietz does not disclose the claimed valve, discharge pipe, discharge pipe pressure sensor, or branch pipe. Dietz also does not disclose controlling a pressure of hydraulic fluid within the discharge pipe, diverting hydraulic fluid from the valve based on the pressure, or hydraulically actuating the valve. Yie does not obviate its deficiencies. Furthermore, Rodgers does not obviate its deficiencies. Therefore, the combination of these references does not render obvious claim 1 or its dependent claims 10, 11, 13, 15, 16, 33, 35, 37 and 42 for at least the same reasons.

Further in regard to claim 35, Dietz does not disclose a quick release coupling between the housing of pump 102 and hydraulic loop 103. The Dietz component 47 identified by the Examiner as

disclosing the claimed quick release coupling is a threaded joint, not a quick release coupling. Also, threaded joint 47 is coupled between upper and lower sections 37, 39 of production string 35, not between pump 102 and hydraulic loop 103, as required by claim 35. For at least these additional reasons, the combination of Dietz and Yie does not render obvious claim 35.

#### Claims 44-46

Claim 44, as amended, recites a safety valve actuatable to divert hydraulic fluid from the subsea tree valve and a pressure switch operable to actuate the safety valve when a pressure of hydraulic fluid in the discharge pipe exceeds a predetermined value. Neither Dietz nor Yie discloses the claimed safety valve or pressure switch.

The Examiner notes that Rodgers discloses a relief valve 24 and a signal combiner 34. See page 8 of Office Action. Applicant respectfully asserts relief valve 24 and signal combiner 34 do not disclose the claimed safety valve and pressure switch, respectively. Relief valve 24 is not actuatable to divert fluid from a valve, as required by claim 44. Further, signal combiner 34 is operable to actuate relief valve 24 based on a pressure of fluid within cylinder 19 of pump 18, not a discharge pipe coupled thereto, also as required by claim 44.

Claim 44, as amended, also recites a discharge pipe and a branch pipe. For reasons presented above in regards to claim 1, the combination of Dietz and Yie does not disclose the claimed discharge pipe and branch pipe.

Thus, the combination of Dietz and Yie does not disclose the claimed safety valve, discharge pipe, branch pipe, relief valve, and pressure switch. Moreover, the combination of Dietz and Yie does not disclose sensing a pressure of hydraulic fluid within the discharge pipe or diverting hydraulic fluid from the safety valve when the pressure exceeds a predetermined value. Rodgers does not obviate their deficiencies. Therefore, the combination of these references does not render obvious claim 44 or its dependent claims 45 and 46.

#### **VII. Claims Rejected as Obvious over Dietz in view of Yie and Rodgers**

The Examiner rejects claims 12 and 43 as obvious over Dietz in view of Yie and in further view of Rodgers. Claim 12 depends from claim 1, and claim 43 is an independent claim.

Claim 43, as amended, recites a discharge pipe, a sensor, and a pressure switch operable to actuate a relief valve to relieve pressure from the safety valve when the pressure of hydraulic fluid in the discharge pipe exceeds a predetermined value measured by the sensor.

For reasons presented above, the combination of Dietz, Yie, and Rodgers does not disclose the discharge pipe, sensor, pressure switch, or relief valve recited by claim 1 and/or claim 43. Moreover, the combination of these references does not disclose sensing a pressure of hydraulic fluid within the discharge pipe or relieving pressure from the safety valve when the pressure in the discharge pipe exceeds a predetermined value, as recited by claims 1 and 43.

Therefore, the combination of these references does not render obvious claims 1 and 43 or dependent claim 12.

#### **VIII. Claims Rejected as Obvious over Dietz in view of Yie and Giese**

The Examiner rejects claims 2-5 and 47 as obvious over Dietz in view of Yie and in further view of Giese. Claims 2-5 depend from claim 1, and claim 47 is an independent claim. Claim 47, as amended, recites a discharge pipe, a sensor, and a pressure switch. For reasons presented above, the combination of Dietz and Yie does not disclose the claimed discharge pipe, sensor, branch pipe, and pressure switch recited by claim 1 and/or claim 47. Giese does not obviate their deficiencies. Furthermore, Rodgers does not obviate their deficiencies. Therefore, the combination of these references does not render obvious claims 1 and 47 or dependent claims 2-5.

#### **IX. Claims Rejected as Obvious over Dietz in view of Yie, Giese and Flinchbaugh**

The Examiner rejects claims 6 and 39 as obvious over Dietz in view of Yie, Giese, and Flinchbaugh. Claims 6 and 39 depend from claim 1. For reasons presented above, the combination of Dietz, Yie, and Giese does not disclose all of the limitations of claims 1. Flinchbaugh does not obviate their deficiencies. Furthermore, Rodgers does not obviate their deficiencies. Therefore, the combination of these references does not render obvious claim 1 or its dependent claims 6 and 39.

#### **X. Claims Rejected as Obvious over Dietz in view of Yie, Giese, Flinchbaugh and Campbell**

The Examiner rejects claims 8 and 9 as obvious over Dietz in view of Yie, Giese, Flinchbaugh, and Campbell. Claims 8 and 9 depend from claim 1. For reasons presented above, the combination of Dietz, Yie, and Giese does not disclose all of the limitations of claims 1. Campbell does not obviate their deficiencies. Furthermore, Rodgers does not obviate their deficiencies. Therefore, the combination of these references does not render obvious claim 1 or its dependent claims 8 and 9.

**XI. Claims Rejected as Obvious over Dietz in view of Yie, Giese and Hommel**

The Examiner rejects claims 36 and 38 as obvious over Dietz in view of Yie, Giese, and Hommel. Claims 36 and 38 depend from claim 1. For reasons presented above, the combination of Dietz, Yie, and Giese does not disclose all of the limitations of claims 1. Hommel does not obviate their deficiencies. Furthermore, Rodgers does not obviate their deficiencies. Therefore, the combination of these references does not render obvious claim 1 or its dependent claims 36 and 38.

**CONCLUSION**

Applicant respectfully requests reconsideration, withdrawal of the objections and rejections, and allowance of the pending claims. It is the Applicant's desire that this case be brought to a swift resolution. Therefore, if the Examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

During the course of these remarks, Applicant may have, at times, referred to particular limitations of the claims that are not shown in the applied prior art. This short-hand approach to discussing the claims should not be construed to mean that the other claimed limitations are not part of the claimed invention. They are, as required by law. Consequently, when interpreting the claims, each of the claims should be construed as a whole, and patentability determined in light of the claimed combination as a whole. Applicant reserves the right to submit the original claims, as well as any canceled claims, in a continuing application and prosecute those claims fully, without regard to any amendments made to those claims in the present application.

It is believed that no extensions of time or fees are required, beyond those that are provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 C.F.R. § 1.136(a), and any fees required (including fees for net addition of claims) are hereby authorized to be charged to Deposit Account Number 03-0335 of Cameron International Corporation.



Appl. No. 10/564,584  
Amdt. Dated February 23, 2010  
Reply to Office Action of January 26, 2010

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